

281278US0PCT.ST25
SEQUENCE LISTING

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Maundrell, Kinsey

<120> USE OF PRION CONVERSION MODULATING AGENTS

<130> 281278US0PCT

<140> 10/560,978
<141> 2005-12-16

<150> PCT/EP04/51170
<151> 2004-06-18

<150> EP 03101795.7
<151> 2003-06-19

<160> 6

<170> PatentIn version 3.3

<210> 1
<211> 4563
<212> PRT
<213> Homo sapiens

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Leu Arg Lys Tyr Thr Tyr Asn Tyr Glu Ala Glu Ser Ser Ser Gly Val
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Pro Gly Thr Ala Asp Ser Arg Ser Ala Thr Arg Ile Asn Cys Lys Val
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Glu Leu Glu Val Pro Gln Leu Cys Ser Phe Ile Leu Lys Thr Ser Gln
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Cys Thr Leu Lys Glu Val Tyr Gly Phe Asn Pro Glu Gly Lys Ala Leu
100 105 110

Leu Lys Lys Thr Lys Asn Ser Glu Glu Phe Ala Ala Ala Met Ser Arg
115 120 125

Tyr Glu Leu Lys Leu Ala Ile Pro Glu Gly Lys Gln Val Phe Leu Tyr
130 135 140

Pro Glu Lys Asp Glu Pro Thr Tyr Ile Leu Asn Ile Lys Arg Gly Ile
145 150 155 160

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Ile Ser Ala Leu Leu Val Pro Pro Glu Thr Glu Glu Ala Lys Gln Val
165 170 175

Leu Phe Leu Asp Thr Val Tyr Gly Asn Cys Ser Thr His Phe Thr Val
180 185 190

Lys Thr Arg Lys Gly Asn Val Ala Thr Glu Ile Ser Thr Glu Arg Asp
195 200 205

Leu Gly Gln Cys Asp Arg Phe Lys Pro Ile Arg Thr Gly Ile Ser Pro
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Leu Ala Leu Ile Lys Gly Met Thr Arg Pro Leu Ser Thr Leu Ile Ser
225 230 235 240

Ser Ser Gln Ser Cys Gln Tyr Thr Leu Asp Ala Lys Arg Lys His Val
245 250 255

Ala Glu Ala Ile Cys Lys Glu Gln His Leu Phe Leu Pro Phe Ser Tyr
260 265 270

Asn Asn Lys Tyr Gly Met Val Ala Gln Val Thr Gln Thr Leu Lys Leu
275 280 285

Glu Asp Thr Pro Lys Ile Asn Ser Arg Phe Phe Gly Glu Gly Thr Lys
290 295 300

Lys Met Gly Leu Ala Phe Glu Ser Thr Lys Ser Thr Ser Pro Pro Lys
305 310 315 320

Gln Ala Glu Ala Val Leu Lys Thr Leu Gln Glu Leu Lys Lys Leu Thr
325 330 335

Ile Ser Glu Gln Asn Ile Gln Arg Ala Asn Leu Phe Asn Lys Leu Val
340 345 350

Thr Glu Leu Arg Gly Leu Ser Asp Glu Ala Val Thr Ser Leu Leu Pro
355 360 365

Gln Leu Ile Glu Val Ser Ser Pro Ile Thr Leu Gln Ala Leu Val Gln
370 375 380

Cys Gly Gln Pro Gln Cys Ser Thr His Ile Leu Gln Trp Leu Lys Arg
385 390 395 400

Val His Ala Asn Pro Leu Leu Ile Asp Val Val Thr Tyr Leu Val Ala
405 410 415

Leu Ile Pro Glu Pro Ser Ala Gln Gln Leu Arg Glu Ile Phe Asn Met
420 425 430

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Ala Arg Asp Gln Arg Ser Arg Ala Thr Leu Tyr Ala Leu Ser His Ala
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Val Asn Asn Tyr His Lys Thr Asn Pro Thr Gly Thr Gln Glu Leu Leu
450 455 460

Asp Ile Ala Asn Tyr Leu Met Glu Gln Ile Gln Asp Asp Cys Thr Gly
465 470 475 480

Asp Glu Asp Tyr Thr Tyr Leu Ile Leu Arg Val Ile Gly Asn Met Gly
485 490 495

Gln Thr Met Glu Gln Leu Thr Pro Glu Leu Lys Ser Ser Ile Leu Lys
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Cys Val Gln Ser Thr Lys Pro Ser Leu Met Ile Gln Lys Ala Ala Ile
515 520 525

Gln Ala Leu Arg Lys Met Glu Pro Lys Asp Lys Asp Gln Glu Val Leu
530 535 540

Leu Gln Thr Phe Leu Asp Asp Ala Ser Pro Gly Asp Lys Arg Leu Ala
545 550 555 560

Ala Tyr Leu Met Leu Met Arg Ser Pro Ser Gln Ala Asp Ile Asn Lys
565 570 575

Ile Val Gln Ile Leu Pro Trp Glu Gln Asn Glu Gln Val Lys Asn Phe
580 585 590

Val Ala Ser His Ile Ala Asn Ile Leu Asn Ser Glu Glu Leu Asp Ile
595 600 605

Gln Asp Leu Lys Lys Leu Val Lys Glu Ala Leu Lys Glu Ser Gln Leu
610 615 620

Pro Thr Val Met Asp Phe Arg Lys Phe Ser Arg Asn Tyr Gln Leu Tyr
625 630 635 640

Lys Ser Val Ser Leu Pro Ser Leu Asp Pro Ala Ser Ala Lys Ile Glu
645 650 655

Gly Asn Leu Ile Phe Asp Pro Asn Asn Tyr Leu Pro Lys Glu Ser Met
660 665 670

Leu Lys Thr Thr Leu Thr Ala Phe Gly Phe Ala Ser Ala Asp Leu Ile
675 680 685

Glu Ile Gly Leu Glu Gly Lys Gly Phe Glu Pro Thr Leu Glu Ala Leu
690 695 700

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Phe Gly Lys Gln Gly Phe Phe Pro Asp Ser Val Asn Lys Ala Leu Tyr
705 710 715 720

Trp Val Asn Gly Gln Val Pro Asp Gly Val Ser Lys Val Leu Val Asp
725 730 735

His Phe Gly Tyr Thr Lys Asp Asp Lys His Glu Gln Asp Met Val Asn
740 745 750

Gly Ile Met Leu Ser Val Glu Lys Leu Ile Lys Asp Leu Lys Ser Lys
755 760 765

Glu Val Pro Glu Ala Arg Ala Tyr Leu Arg Ile Leu Gly Glu Glu Leu
770 775 780

Gly Phe Ala Ser Leu His Asp Leu Gln Leu Leu Gly Lys Leu Leu Leu
785 790 795 800

Met Gly Ala Arg Thr Leu Gln Gly Ile Pro Gln Met Ile Gly Glu Val
805 810 815

Ile Arg Lys Gly Ser Lys Asn Asp Phe Phe Leu His Tyr Ile Phe Met
820 825 830

Glu Asn Ala Phe Glu Leu Pro Thr Gly Ala Gly Leu Gln Leu Gln Ile
835 840 845

Ser Ser Ser Gly Val Ile Ala Pro Gly Ala Lys Ala Gly Val Lys Leu
850 855 860

Glu Val Ala Asn Met Gln Ala Glu Leu Val Ala Lys Pro Ser Val Ser
865 870 875 880

Val Glu Phe Val Thr Asn Met Gly Ile Ile Ile Pro Asp Phe Ala Arg
885 890 895

Ser Gly Val Gln Met Asn Thr Asn Phe Phe His Glu Ser Gly Leu Glu
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Ala His Val Ala Leu Lys Ala Gly Lys Leu Lys Phe Ile Ile Pro Ser
915 920 925

Pro Lys Arg Pro Val Lys Leu Leu Ser Gly Gly Asn Thr Leu His Leu
930 935 940

Val Ser Thr Thr Lys Thr Glu Val Ile Pro Pro Leu Ile Glu Asn Arg
945 950 955 960

Gln Ser Trp Ser Val Cys Lys Gln Val Phe Pro Gly Leu Asn Tyr Cys
965 970 975

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Thr Ser Gly Ala Tyr Ser Asn Ala Ser Ser Thr Asp Ser Ala Ser Tyr
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Tyr Pro Leu Thr Gly Asp Thr Arg Leu Glu Leu Glu Leu Arg Pro Thr
995 1000 1005

Gly Glu Ile Glu Gln Tyr Ser Val Ser Ala Thr Tyr Glu Leu Gln
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Arg Glu Asp Arg Ala Leu Val Asp Thr Leu Lys Phe Val Thr Gln
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Ala Glu Gly Ala Lys Gln Thr Glu Ala Thr Met Thr Phe Lys Tyr
1040 1045 1050

Asn Arg Gln Ser Met Thr Leu Ser Ser Glu Val Gln Ile Pro Asp
1055 1060 1065

Phe Asp Val Asp Leu Gly Thr Ile Leu Arg Val Asn Asp Glu Ser
1070 1075 1080

Thr Glu Gly Lys Thr Ser Tyr Arg Leu Thr Leu Asp Ile Gln Asn
1085 1090 1095

Lys Lys Ile Thr Glu Val Ala Leu Met Gly His Leu Ser Cys Asp
1100 1105 1110

Thr Lys Glu Glu Arg Lys Ile Lys Gly Val Ile Ser Ile Pro Arg
1115 1120 1125

Leu Gln Ala Glu Ala Arg Ser Glu Ile Leu Ala His Trp Ser Pro
1130 1135 1140

Ala Lys Leu Leu Leu Gln Met Asp Ser Ser Ala Thr Ala Tyr Gly
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Ser Thr Val Ser Lys Arg Val Ala Trp His Tyr Asp Glu Glu Lys
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Ile Glu Phe Glu Trp Asn Thr Gly Thr Asn Val Asp Thr Lys Lys
1175 1180 1185

Met Thr Ser Asn Phe Pro Val Asp Leu Ser Asp Tyr Pro Lys Ser
1190 1195 1200

Leu His Met Tyr Ala Asn Arg Leu Leu Asp His Arg Val Pro Glu
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Thr Asp Met Thr Phe Arg His Val Gly Ser Lys Leu Ile Val Ala
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Met Ser Ser Trp Leu Gln Lys Ala Ser Gly Ser Leu Pro Tyr Thr
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Gln Thr Leu Gln Asp His Leu Asn Ser Leu Lys Glu Phe Asn Leu
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Gln Asn Met Gly Leu Pro Asp Phe His Ile Pro Glu Asn Leu Phe
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Leu Lys Ser Asp Gly Arg Val Lys Tyr Thr Leu Asn Lys Asn Ser
 1280 1285 1290

Leu Lys Ile Glu Ile Pro Leu Pro Phe Gly Gly Lys Ser Ser Arg
 1295 1300 1305

Asp Leu Lys Met Leu Glu Thr Val Arg Thr Pro Ala Leu His Phe
 1310 1315 1320

Lys Ser Val Gly Phe His Leu Pro Ser Arg Glu Phe Gln Val Pro
 1325 1330 1335

Thr Phe Thr Ile Pro Lys Leu Tyr Gln Leu Gln Val Pro Leu Leu
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Gly Val Leu Asp Leu Ser Thr Asn Val Tyr Ser Asn Leu Tyr Asn
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Trp Ser Ala Ser Tyr Ser Gly Gly Asn Thr Ser Thr Asp His Phe
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Ser Leu Arg Ala Arg Tyr His Met Lys Ala Asp Ser Val Val Asp
 1385 1390 1395

Leu Leu Ser Tyr Asn Val Gln Gly Ser Gly Glu Thr Thr Tyr Asp
 1400 1405 1410

His Lys Asn Thr Phe Thr Leu Ser Cys Asp Gly Ser Leu Arg His
 1415 1420 1425

Lys Phe Leu Asp Ser Asn Ile Lys Phe Ser His Val Glu Lys Leu
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Gly Asn Asn Pro Val Ser Lys Gly Leu Leu Ile Phe Asp Ala Ser
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Ser Ser Trp Gly Pro Gln Met Ser Ala Ser Val His Leu Asp Ser
 1460 1465 1470

Lys Lys Lys Gln His Leu Phe Val Lys Glu Val Lys Ile Asp Gly
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Gln Phe Arg Val Ser Ser Phe Tyr Ala Lys Gly Thr Tyr Gly Leu
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Ser Cys Gln Arg Asp Pro Asn Thr Gly Arg Leu Asn Gly Glu Ser
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Asn Leu Arg Phe Asn Ser Ser Tyr Leu Gln Gly Thr Asn Gln Ile
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Thr Gly Arg Tyr Glu Asp Gly Thr Leu Ser Leu Thr Ser Thr Ser
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Asp Leu Gln Ser Gly Ile Ile Lys Asn Thr Ala Ser Leu Lys Tyr
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Glu Asn Tyr Glu Leu Thr Leu Lys Ser Asp Thr Asn Gly Lys Tyr
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Lys Asn Phe Ala Thr Ser Asn Lys Met Asp Met Thr Phe Ser Lys
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Gln Asn Ala Leu Leu Arg Ser Glu Tyr Gln Ala Asp Tyr Glu Ser
 1595 1600 1605

Leu Arg Phe Phe Ser Leu Leu Ser Gly Ser Leu Asn Ser His Gly
 1610 1615 1620

Leu Glu Leu Asn Ala Asp Ile Leu Gly Thr Asp Lys Ile Asn Ser
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Gly Ala His Lys Ala Thr Leu Arg Ile Gly Gln Asp Gly Ile ser
 1640 1645 1650

Thr Ser Ala Thr Thr Asn Leu Lys Cys Ser Leu Leu Val Leu Glu
 1655 1660 1665

Asn Glu Leu Asn Ala Glu Leu Gly Leu Ser Gly Ala Ser Met Lys
 1670 1675 1680

Leu Thr Thr Asn Gly Arg Phe Arg Glu His Asn Ala Lys Phe Ser
 1685 1690 1695

Leu Asp Gly Lys Ala Ala Leu Thr Glu Leu Ser Leu Gly Ser Ala
 1700 1705 1710

Tyr Gln Ala Met Ile Leu Gly Val Asp Ser Lys Asn Ile Phe Asn
 1715 1720 1725

Phe Lys Val Ser Gln Glu Gly Leu Lys Leu Ser Asn Asp Met Met
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Gly Ser Tyr Ala Glu Met Lys Phe Asp His Thr Asn Ser Leu Asn
 1745 1750 1755

Ile Ala Gly Leu Ser Leu Asp Phe Ser Ser Lys Leu Asp Asn Ile
 1760 1765 1770

Tyr Ser Ser Asp Lys Phe Tyr Lys Gln Thr Val Asn Leu Gln Leu
 1775 1780 1785

Gln Pro Tyr Ser Leu Val Thr Thr Leu Asn Ser Asp Leu Lys Tyr
 1790 1795 1800

Asn Ala Leu Asp Leu Thr Asn Asn Gly Lys Leu Arg Leu Glu Pro
 1805 1810 1815

Leu Lys Leu His Val Ala Gly Asn Leu Lys Gly Ala Tyr Gln Asn
 1820 1825 1830

Asn Glu Ile Lys His Ile Tyr Ala Ile Ser Ser Ala Ala Leu Ser
 1835 1840 1845

Ala Ser Tyr Lys Ala Asp Thr Val Ala Lys Val Gln Gly Val Glu
 1850 1855 1860

Phe Ser His Arg Leu Asn Thr Asp Ile Ala Gly Leu Ala Ser Ala
 1865 1870 1875

Ile Asp Met Ser Thr Asn Tyr Asn Ser Asp Ser Leu His Phe Ser
 1880 1885 1890

Asn Val Phe Arg Ser Val Met Ala Pro Phe Thr Met Thr Ile Asp
 1895 1900 1905

Ala His Thr Asn Gly Asn Gly Lys Leu Ala Leu Trp Gly Glu His
 1910 1915 1920

Thr Gly Gln Leu Tyr Ser Lys Phe Leu Leu Lys Ala Glu Pro Leu
 1925 1930 1935

Ala Phe Thr Phe Ser His Asp Tyr Lys Gly Ser Thr Ser His His
 1940 1945 1950

Leu Val Ser Arg Lys Ser Ile Ser Ala Ala Leu Glu His Lys Val
 1955 1960 1965

Ser Ala Leu Leu Thr Pro Ala Glu Gln Thr Gly Thr Trp Lys Leu
 1970 1975 1980

Lys Thr Gln Phe Asn Asn Asn Glu Tyr Ser Gln Asp Leu Asp Ala
 1985 1990 1995

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Tyr Asn Thr Lys Asp Lys Ile Gly Val Glu Leu Thr Gly Arg Thr
2000 2005 2010

Leu Ala Asp Leu Thr Leu Leu Asp Ser Pro Ile Lys Val Pro Leu
2015 2020 2025

Leu Leu Ser Glu Pro Ile Asn Ile Ile Asp Ala Leu Glu Met Arg
2030 2035 2040

Asp Ala Val Glu Lys Pro Gln Glu Phe Thr Ile Val Ala Phe Val
2045 2050 2055

Lys Tyr Asp Lys Asn Gln Asp Val His Ser Ile Asn Leu Pro Phe
2060 2065 2070

Phe Glu Thr Leu Gln Glu Tyr Phe Glu Arg Asn Arg Gln Thr Ile
2075 2080 2085

Ile Val Val Val Glu Asn Val Gln Arg Asn Leu Lys His Ile Asn
2090 2095 2100

Ile Asp Gln Phe Val Arg Lys Tyr Arg Ala Ala Leu Gly Lys Leu
2105 2110 2115

Pro Gln Gln Ala Asn Asp Tyr Leu Asn Ser Phe Asn Trp Glu Arg
2120 2125 2130

Gln Val Ser His Ala Lys Glu Lys Leu Thr Ala Leu Thr Lys Lys
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Tyr Arg Ile Thr Glu Asn Asp Ile Gln Ile Ala Leu Asp Asp Ala
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Lys Ile Asn Phe Asn Glu Lys Leu Ser Gln Leu Gln Thr Tyr Met
2165 2170 2175

Ile Gln Phe Asp Gln Tyr Ile Lys Asp Ser Tyr Asp Leu His Asp
2180 2185 2190

Leu Lys Ile Ala Ile Ala Asn Ile Ile Asp Glu Ile Ile Glu Lys
2195 2200 2205

Leu Lys Ser Leu Asp Glu His Tyr His Ile Arg Val Asn Leu Val
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Lys Thr Ile His Asp Leu His Leu Phe Ile Glu Asn Ile Asp Phe
2225 2230 2235

Asn Lys Ser Gly Ser Ser Thr Ala Ser Trp Ile Gln Asn Val Asp
2240 2245 2250

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Thr Lys Tyr Gln Ile Arg Ile Gln Ile Gln Glu Lys Leu Gln Gln
 2255 2260 2265

Leu Lys Arg His Ile Gln Asn Ile Asp Ile Gln His Leu Ala Gly
 2270 2275 2280

Lys Leu Lys Gln His Ile Glu Ala Ile Asp Val Arg Val Leu Leu
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Asp Gln Leu Gly Thr Thr Ile Ser Phe Glu Arg Ile Asn Asp Val
 2300 2305 2310

Leu Glu His Val Lys His Phe Val Ile Asn Leu Ile Gly Asp Phe
 2315 2320 2325

Glu Val Ala Glu Lys Ile Asn Ala Phe Arg Ala Lys Val His Glu
 2330 2335 2340

Leu Ile Glu Arg Tyr Glu Val Asp Gln Gln Ile Gln Val Leu Met
 2345 2350 2355

Asp Lys Leu Val Glu Leu Thr His Gln Tyr Lys Leu Lys Glu Thr
 2360 2365 2370

Ile Gln Lys Leu Ser Asn Val Leu Gln Gln Val Lys Ile Lys Asp
 2375 2380 2385

Tyr Phe Glu Lys Leu Val Gly Phe Ile Asp Asp Ala Val Lys Lys
 2390 2395 2400

Leu Asn Glu Leu Ser Phe Lys Thr Phe Ile Glu Asp Val Asn Lys
 2405 2410 2415

Phe Leu Asp Met Leu Ile Lys Lys Leu Lys Ser Phe Asp Tyr His
 2420 2425 2430

Gln Phe Val Asp Glu Thr Asn Asp Lys Ile Arg Glu Val Thr Gln
 2435 2440 2445

Arg Leu Asn Gly Glu Ile Gln Ala Leu Glu Leu Pro Gln Lys Ala
 2450 2455 2460

Glu Ala Leu Lys Leu Phe Leu Glu Glu Thr Lys Ala Thr Val Ala
 2465 2470 2475

Val Tyr Leu Glu Ser Leu Gln Asp Thr Lys Ile Thr Leu Ile Ile
 2480 2485 2490

Asn Trp Leu Gln Glu Ala Leu Ser Ser Ala Ser Leu Ala His Met
 2495 2500 2505

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Lys Ala Lys Phe Arg Glu Thr 2510 Leu Glu Asp Thr Arg 2520 Asp Arg Met
 Tyr Gln Met Asp Ile Gln Gln 2525 Glu Leu Gln Arg Tyr 2535 Leu Ser Leu
 Val Gly Gln Val Tyr Ser Thr 2540 Leu Val Thr Tyr Ile 2550 Ser Asp Trp
 Trp Thr Leu Ala Ala Lys Asn 2555 Leu Thr Asp Phe Ala 2565 Glu Gln Tyr
 Ser Ile Gln Asp Trp Ala Lys 2570 Arg Met Lys Ala Leu 2580 Val Glu Gln
 Gly Phe Thr Val Pro Glu Ile 2585 Lys Thr Ile Leu Gly 2595 Thr Met Pro
 Ala Phe Glu Val Ser Leu Gln 2600 Ala Leu Gln Lys Ala 2610 Thr Phe Gln
 Thr Pro Asp Phe Ile Val Pro 2615 Leu Thr Asp Leu Arg 2625 Ile Pro Ser
 Val Gln Ile Asn Phe Lys Asp 2630 Leu Lys Asn Ile Lys 2640 Ile Pro Ser
 Arg Phe Ser Thr Pro Glu Phe 2645 Thr Ile Leu Asn Thr 2655 Phe His Ile
 Pro Ser Phe Thr Ile Asp Phe 2660 Val Glu Met Lys Val 2670 Lys Ile Ile
 Arg Thr Ile Asp Gln Met Gln 2675 Asn Ser Glu Leu Gln 2685 Trp Pro Val
 Pro Asp Ile Tyr Leu Arg Asp 2690 Leu Lys Val Glu Asp 2700 Ile Pro Leu
 Ala Arg Ile Thr Leu Pro Asp 2705 Phe Arg Leu Pro Glu 2715 Ile Ala Ile
 Pro Glu Phe Ile Ile Pro Thr 2720 Leu Asn Leu Asn Asp 2730 Phe Gln Val
 Pro Asp Leu His Ile Pro Glu 2735 Phe Gln Leu Pro His 2745 Ile Ser His
 Thr Ile Glu Val Pro Thr Phe 2750 Gly Lys Leu Tyr Ser 2760 Ile Leu Lys

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Ile Gln Ser Pro Leu Phe Thr 2765 2770 Leu Asp Ala Asn Ala 2775 Asp Ile Gly

Asn Gly Thr Thr Ser Ala Asn 2780 2785 Glu Ala Gly Ile Ala Ala Ser Ile

2790

Thr Ala Lys Gly Glu Ser Lys 2795 2800 Leu Glu Val Leu Asn Phe Asp Phe

2805

Gln Ala Asn Ala Gln Leu Ser 2810 2815 Asn Pro Lys Ile Asn Pro Leu Ala

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Leu Lys Glu Ser Val Lys Phe 2825 2830 Ser Ser Lys Tyr Leu Arg Thr Glu

2835

His Gly Ser Glu Met Leu Phe 2840 2845 Phe Gly Asn Ala Ile Glu Gly Lys

2850

Ser Asn Thr Val Ala Ser Leu 2855 2860 His Thr Glu Lys Asn Thr Leu Glu

2865

Leu Ser Asn Gly Val Ile Val 2870 2875 Lys Ile Asn Asn Gln Leu Thr Leu

2880

Asp Ser Asn Thr Lys Tyr Phe 2885 2890 His Lys Leu Asn Ile Pro Lys Leu

2895

Asp Phe Ser Ser Gln Ala Asp 2900 2905 Leu Arg Asn Glu Ile Lys Thr Leu

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Leu Lys Ala Gly His Ile Ala 2915 2920 Trp Thr Ser Ser Gly Lys Gly Ser

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Trp Lys Trp Ala Cys Pro Arg 2930 2935 Phe Ser Asp Glu Gly Thr His Glu

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Ser Gln Ile Ser Phe Thr Ile 2945 2950 Glu Gly Pro Leu Thr Ser Phe Gly

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Leu Ser Asn Lys Ile Asn Ser 2960 2965 Lys His Leu Arg Val Asn Gln Asn

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Leu Val Tyr Glu Ser Gly Ser 2975 2980 Leu Asn Phe Ser Lys Leu Glu Ile

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Gln Ser Gln Val Asp Ser Gln 2990 2995 His Val Gly His Ser Val Leu Thr

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Ala Lys Gly Met Ala Leu Phe 3005 3010 Gly Glu Gly Lys Ala Glu Phe Thr

3015

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Gly Arg His Asp Ala His Leu Asn Gly Lys Val Ile Gly Thr Leu
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Lys Asn Ser Leu Phe Phe Ser Ala Gln Pro Phe Glu Ile Thr Ala
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Ser Thr Asn Asn Glu Gly Asn Leu Lys Val Arg Phe Pro Leu Arg
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Leu Thr Gly Lys Ile Asp Phe Leu Asn Asn Tyr Ala Leu Phe Leu
 3065 3070 3075

Ser Pro Ser Ala Gln Gln Ala Ser Trp Gln Val Ser Ala Arg Phe
 3080 3085 3090

Asn Gln Tyr Lys Tyr Asn Gln Asn Phe Ser Ala Gly Asn Asn Glu
 3095 3100 3105

Asn Ile Met Glu Ala His Val Gly Ile Asn Gly Glu Ala Asn Leu
 3110 3115 3120

Asp Phe Leu Asn Ile Pro Leu Thr Ile Pro Glu Met Arg Leu Pro
 3125 3130 3135

Tyr Thr Ile Ile Thr Thr Pro Pro Leu Lys Asp Phe Ser Leu Trp
 3140 3145 3150

Glu Lys Thr Gly Leu Lys Glu Phe Leu Lys Thr Thr Lys Gln Ser
 3155 3160 3165

Phe Asp Leu Ser Val Lys Ala Gln Tyr Lys Lys Asn Lys His Arg
 3170 3175 3180

His Ser Ile Thr Asn Pro Leu Ala Val Leu Cys Glu Phe Ile Ser
 3185 3190 3195

Gln Ser Ile Lys Ser Phe Asp Arg His Phe Glu Lys Asn Arg Asn
 3200 3205 3210

Asn Ala Leu Asp Phe Val Thr Lys Ser Tyr Asn Glu Thr Lys Ile
 3215 3220 3225

Lys Phe Asp Lys Tyr Lys Ala Glu Lys Ser His Asp Glu Leu Pro
 3230 3235 3240

Arg Thr Phe Gln Ile Pro Gly Tyr Thr Val Pro Val Val Asn Val
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Glu Val Ser Pro Phe Thr Ile Glu Met Ser Ala Phe Gly Tyr Val
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Phe Pro Lys Ala Val Ser Met Pro Ser Phe Ser Ile Leu Gly Ser
 3275 3280 3285

Asp Val Arg Val Pro Ser Tyr Thr Leu Ile Leu Pro Ser Leu Glu
 3290 3295 3300

Leu Pro Val Leu His Val Pro Arg Asn Leu Lys Leu Ser Leu Pro
 3305 3310 3315

His Phe Lys Glu Leu Cys Thr Ile Ser His Ile Phe Ile Pro Ala
 3320 3325 3330

Met Gly Asn Ile Thr Tyr Asp Phe Ser Phe Lys Ser Ser Val Ile
 3335 3340 3345

Thr Leu Asn Thr Asn Ala Glu Leu Phe Asn Gln Ser Asp Ile Val
 3350 3355 3360

Ala His Leu Leu Ser Ser Ser Ser Ser Val Ile Asp Ala Leu Gln
 3365 3370 3375

Tyr Lys Leu Glu Gly Thr Thr Arg Leu Thr Arg Lys Arg Gly Leu
 3380 3385 3390

Lys Leu Ala Thr Ala Leu Ser Leu Ser Asn Lys Phe Val Glu Gly
 3395 3400 3405

Ser His Asn Ser Thr Val Ser Leu Thr Thr Lys Asn Met Glu Val
 3410 3415 3420

Ser Val Ala Lys Thr Thr Lys Ala Glu Ile Pro Ile Leu Arg Met
 3425 3430 3435

Asn Phe Lys Gln Glu Leu Asn Gly Asn Thr Lys Ser Lys Pro Thr
 3440 3445 3450

Val Ser Ser Ser Met Glu Phe Lys Tyr Asp Phe Asn Ser Ser Met
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Leu Tyr Ser Thr Ala Lys Gly Ala Val Asp His Lys Leu Ser Leu
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Glu Ser Leu Thr Ser Tyr Phe Ser Ile Glu Ser Ser Thr Lys Gly
 3485 3490 3495

Asp Val Lys Gly Ser Val Leu Ser Arg Glu Tyr Ser Gly Thr Ile
 3500 3505 3510

Ala Ser Glu Ala Asn Thr Tyr Leu Asn Ser Lys Ser Thr Arg Ser
 3515 3520 3525

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Ser Val Lys Leu Gln Gly Thr Ser Lys Ile Asp Asp Ile Trp Asn
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Leu Glu Val Lys Glu Asn Phe Ala Gly Glu Ala Thr Leu Gln Arg
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Ile Tyr Ser Leu Trp Glu His Ser Thr Lys Asn His Leu Gln Leu
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Glu Gly Leu Phe Phe Thr Asn Gly Glu His Thr Ser Lys Ala Thr
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Leu Glu Leu Ser Pro Trp Gln Met Ser Ala Leu Val Gln Val His
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Ala Ser Gln Pro Ser Ser Phe His Asp Phe Pro Asp Leu Gly Gln
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Glu Val Ala Leu Asn Ala Asn Thr Lys Asn Gln Lys Ile Arg Trp
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Lys Asn Glu Val Arg Ile His Ser Gly Ser Phe Gln Ser Gln Val
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Glu Leu Ser Asn Asp Gln Glu Lys Ala His Leu Asp Ile Ala Gly
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Ser Leu Glu Gly His Leu Arg Phe Leu Lys Asn Ile Ile Leu Pro
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Val Tyr Asp Lys Ser Leu Trp Asp Phe Leu Lys Leu Asp Val Thr
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Thr Ser Ile Gly Arg Arg Gln His Leu Arg Val Ser Thr Ala Phe
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Val Tyr Thr Lys Asn Pro Asn Gly Tyr Ser Phe Ser Ile Pro Val
 3710 3715 3720

Lys Val Leu Ala Asp Lys Phe Ile Thr Pro Gly Leu Lys Leu Asn
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Asp Leu Asn Ser Val Leu Val Met Pro Thr Phe His Val Pro Phe
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Thr Asp Leu Gln Val Pro Ser Cys Lys Leu Asp Phe Arg Glu Ile
 3755 3760 3765

Gln Ile Tyr Lys Lys Leu Arg Thr Ser Ser Phe Ala Leu Asn Leu
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Pro Thr Leu Pro Glu Val Lys Phe Pro Glu Val Asp Val Leu Thr
3785 3790 3795

Lys Tyr Ser Gln Pro Glu Asp Ser Leu Ile Pro Phe Phe Glu Ile
3800 3805 3810

Thr Val Pro Glu Ser Gln Leu Thr Val Ser Gln Phe Thr Leu Pro
3815 3820 3825

Lys Ser Val Ser Asp Gly Ile Ala Ala Leu Asp Leu Asn Ala Val
3830 3835 3840

Ala Asn Lys Ile Ala Asp Phe Glu Leu Pro Thr Ile Ile Val Pro
3845 3850 3855

Glu Gln Thr Ile Glu Ile Pro Ser Ile Lys Phe Ser Val Pro Ala
3860 3865 3870

Gly Ile Val Ile Pro Ser Phe Gln Ala Leu Thr Ala Arg Phe Glu
3875 3880 3885

Val Asp Ser Pro Val Tyr Asn Ala Thr Trp Ser Ala Ser Leu Lys
3890 3895 3900

Asn Lys Ala Asp Tyr Val Glu Thr Val Leu Asp Ser Thr Cys Ser
3905 3910 3915

Ser Thr Val Gln Phe Leu Glu Tyr Glu Leu Asn Val Leu Gly Thr
3920 3925 3930

His Lys Ile Glu Asp Gly Thr Leu Ala Ser Lys Thr Lys Gly Thr
3935 3940 3945

Leu Ala His Arg Asp Phe Ser Ala Glu Tyr Glu Glu Asp Gly Lys
3950 3955 3960

Phe Glu Gly Leu Gln Glu Trp Glu Gly Lys Ala His Leu Asn Ile
3965 3970 3975

Lys Ser Pro Ala Phe Thr Asp Leu His Leu Arg Tyr Gln Lys Asp
3980 3985 3990

Lys Lys Gly Ile Ser Thr Ser Ala Ala Ser Pro Ala Val Gly Thr
3995 4000 4005

Val Gly Met Asp Met Asp Glu Asp Asp Asp Phe Ser Lys Trp Asn
4010 4015 4020

Phe Tyr Tyr Ser Pro Gln Ser Ser Pro Asp Lys Lys Leu Thr Ile
4025 4030 4035

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Phe Lys Thr Glu Leu Arg Val Arg Glu Ser Asp Glu Glu Thr Gln
4040 4045 4050 4055 4060 4065 4070 4075 4080 4085 4090 4095 4100 4105 4110 4115 4120 4125 4130 4135 4140 4145 4150 4155 4160 4165 4170 4175 4180 4185 4190 4195 4200 4205 4210 4215 4220 4225 4230 4235 4240 4245 4250 4255 4260 4265 4270 4275 4280 4285 4290

Ile Lys Val Asn Trp Glu Glu Ala Ala Ser Gly Leu Leu Thr
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Ser Leu Lys Asp Asn Val Pro Lys Ala Thr Gly Val Leu Tyr Asp
4070 4075 4080

Tyr Val Asn Lys Tyr His Trp Glu His Thr Gly Leu Thr Leu Arg
4085 4090 4095

Glu Val Ser Ser Lys Leu Arg Arg Asn Leu Gln Asn Asn Ala Glu
4100 4105 4110

Trp Val Tyr Gln Gly Ala Ile Arg Gln Ile Asp Asp Ile Asp Val
4115 4120 4125

Arg Phe Gln Lys Ala Ala Ser Gly Thr Thr Gly Thr Tyr Gln Glu
4130 4135 4140

Trp Lys Asp Lys Ala Gln Asn Leu Tyr Gln Glu Leu Leu Thr Gln
4145 4150 4155

Glu Gly Gln Ala Ser Phe Gln Gly Leu Lys Asp Asn Val Phe Asp
4160 4165 4170

Gly Leu Val Arg Val Thr Gln Lys Phe His Met Lys Val Lys His
4175 4180 4185

Leu Ile Asp Ser Leu Ile Asp Phe Leu Asn Phe Pro Arg Phe Gln
4190 4195 4200

Phe Pro Gly Lys Pro Gly Ile Tyr Thr Arg Glu Glu Leu Cys Thr
4205 4210 4215

Met Phe Ile Arg Glu Val Gly Thr Val Leu Ser Gln Val Tyr Ser
4220 4225 4230

Lys Val His Asn Gly Ser Glu Ile Leu Phe Ser Tyr Phe Gln Asp
4235 4240 4245

Leu Val Ile Thr Leu Pro Phe Glu Leu Arg Lys His Lys Leu Ile
4250 4255 4260

Asp Val Ile Ser Met Tyr Arg Glu Leu Leu Lys Asp Leu Ser Lys
4265 4270 4275

Glu Ala Gln Glu Val Phe Lys Ala Ile Gln Ser Leu Lys Thr Thr
4280 4285 4290

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Glu Val Leu Arg Asn Leu Gln Asp Leu Leu Gln Phe Ile Phe Gln
 4295 4300 4305

Leu Ile Glu Asp Asn Ile Lys Gln Leu Lys Glu Met Lys Phe Thr
 4310 4315 4320

Tyr Leu Ile Asn Tyr Ile Gln Asp Glu Ile Asn Thr Ile Phe Asn
 4325 4330 4335

Asp Tyr Ile Pro Tyr Val Phe Lys Leu Leu Lys Glu Asn Leu Cys
 4340 4345 4350

Leu Asn Leu His Lys Phe Asn Glu Phe Ile Gln Asn Glu Leu Gln
 4355 4360 4365

Glu Ala Ser Gln Glu Leu Gln Gln Ile His Gln Tyr Ile Met Ala
 4370 4375 4380

Leu Arg Glu Glu Tyr Phe Asp Pro Ser Ile Val Gly Trp Thr Val
 4385 4390 4395

Lys Tyr Tyr Glu Leu Glu Lys Ile Val Ser Leu Ile Lys Asn
 4400 4405 4410

Leu Leu Val Ala Leu Lys Asp Phe His Ser Glu Tyr Ile Val Ser
 4415 4420 4425

Ala Ser Asn Phe Thr Ser Gln Leu Ser Ser Gln Val Glu Gln Phe
 4430 4435 4440

Leu His Arg Asn Ile Gln Glu Tyr Leu Ser Ile Leu Thr Asp Pro
 4445 4450 4455

Asp Gly Lys Gly Lys Glu Lys Ile Ala Glu Leu Ser Ala Thr Ala
 4460 4465 4470

Gln Glu Ile Ile Lys Ser Gln Ala Ile Ala Thr Lys Lys Ile Ile
 4475 4480 4485

Ser Asp Tyr His Gln Gln Phe Arg Tyr Lys Leu Gln Asp Phe Ser
 4490 4495 4500

Asp Gln Leu Ser Asp Tyr Tyr Glu Lys Phe Ile Ala Glu Ser Lys
 4505 4510 4515

Arg Leu Ile Asp Leu Ser Ile Gln Asn Tyr His Thr Phe Leu Ile
 4520 4525 4530

Tyr Ile Thr Glu Leu Leu Lys Lys Leu Gln Ser Thr Thr Val Met
 4535 4540 4545

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Asn Pro Tyr Met Lys Leu Ala Pro Gly Glu Leu Thr Ile Ile Leu
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<213> Homo sapiens

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20 25 30

Arg Gln Gln Thr Glu Trp Gln Ser Gly Gln Arg Trp Glu Leu Ala Leu
35 40 45

Gly Arg Phe Trp Asp Tyr Leu Arg Trp Val Gln Thr Leu Ser Glu Gln
50 55 60

Val Gln Glu Glu Leu Leu Ser Ser Gln Val Thr Gln Glu Leu Arg Ala
65 70 75 80

Leu Met Asp Glu Thr Met Lys Glu Leu Lys Ala Tyr Lys Ser Glu Leu
85 90 95

Glu Glu Gln Leu Thr Pro Val Ala Glu Glu Thr Arg Ala Arg Leu Ser
100 105 110

Lys Glu Leu Gln Ala Ala Gln Ala Arg Leu Gly Ala Asp Met Glu Asp
115 120 125

Val Cys Gly Arg Leu Val Gln Tyr Arg Gly Glu Val Gln Ala Met Leu
130 135 140

Gly Gln Ser Thr Glu Glu Leu Arg Val Arg Leu Ala Ser His Leu Arg
145 150 155 160

Lys Leu Arg Lys Arg Leu Leu Arg Asp Ala Asp Asp Leu Gln Lys Arg
165 170 175

Leu Ala Val Tyr Gln Ala Gly Ala Arg Glu Gly Ala Glu Arg Gly Leu
180 185 190

Ser Ala Ile Arg Glu Arg Leu Gly Pro Leu Val Glu Gln Gly Arg Val
195 200 205

Arg Ala Ala Thr Val Gly Ser Leu Ala Gly Gln Pro Leu Gln Glu Arg
210 215 220

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Ala Gln Ala Trp Gly Glu Arg Leu Arg Ala Arg Met Glu Glu Met Gly
225 230 235 240

Ser Arg Thr Arg Asp Arg Leu Asp Glu Val Lys Glu Gln Val Ala Glu
245 250 255

Val Arg Ala Lys Leu Glu Glu Gln Ala Gln Gln Ile Arg Leu Gln Ala
260 265 270

Glu Ala Phe Gln Ala Arg Leu Lys Ser Trp Phe Glu Pro Leu Val Glu
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Val Gly Thr Ser Ala Ala Pro Val Pro Ser Asp Asn His
305 310 315

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22

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22

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agaccacgag aatgcgaagg

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